THE COMMONWEALTH OF MASSACHUSETTS

DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

Investigation by the Department of Telecommunications and Energy On Its Own Motion Into Distributed Generation	)	D.T.E. 02-38

REPLY COMMENTS OF THE

MASSACHUSETTS

DIVISION OF ENERGY RESOURCES

Executive Summary

The initial comments in this proceeding reflect consensus regarding existing barriers to the development of distributed generation, and provide a range of recommendations as to how barriers might be mitigated. The initial comments also reflect support for resolving key issues through collaborative processes. The Division of Energy Resources ("DOER") is committed to the removal of impediments to fully competitive electricity markets in Massachusetts, and thus to ensuring that distributed generation has an opportunity to compete fairly with other resources to serve the needs of customers in a deregulated electricity marketplace. The DOER views the various recommendations in the initial comments as falling into three categories. Based on the nature of the issues in the three categories, DOER recommends that the Department take the following actions:

1. Act immediately on issues ripe for Department resolution;
2. Initiate collaborative discussions to resolve issues best addressed through consensual processes;
3. Continue this proceeding to address ratemaking issues for distributed generation.

DOER is also proposing a process by which the Department can expedite these proceedings.

I. Introduction

Section 11E of the Commonwealth's Restructuring Act requires DOER to monitor activities in wholesale power markets and to:

> "inform consumers, energy suppliers, the department of telecommunications and energy, and the general court about the operation of retail markets and any deficiencies in the operation of those markets, and to recommend improvements to such."

The initial comments in this proceeding support the argument that there are significant, unwarranted barriers to distributed generation ("DG") that are impeding the development of a

fully competitive market in Massachusetts. The initial comments also indicate a strong interest in moving forward to address the key issues through collaborative processes.

With the goal of ensuring a healthy marketplace in which distributed generation competes fairly with other resource options, DOER recommends that the Department of Telecommunications and Energy ("Department") adopt a phased approach to addressing remaining issues that includes the immediate facilitation of a stakeholder process to resolve outstanding issues through collaborative discussions. These reply comments support DOER's recommendation that the Department act immediately on certain issues to improve the competitive opportunities for DG in the Commonwealth's electricity markets and offer suggestions on a process by which the Department can ensure a successful resolution to this important proceeding.

II. Highlights of Initial Comments by Participants

This section presents a summary of the initial comments submitted in this proceeding to highlight the broad support for the DOER's subsequent recommendations. The initial comments reveal clear consensus on the need for Department action and how to proceed. Although a majority of the comments demonstrated agreement on specific issues, disagreements exist with respect to others. Upon consideration of the issues raised in the initial comments, DOER organizes its reply comments into three major categories: the role of the distribution company in deployment of distributed generation; interconnection standards and policies; and ratemaking issues.

A. Role of the Distribution Utility in Encouraging Deployment of Distributed Generation

Several parties, including the distribution utilities, indicated that distributed generation should have a more prominent place in distribution utility planning processes. Many suggested (see, e.g., UCS et al, at 11) that distribution utilities identify the locations on their T&D systems where upgrades are necessary if distributed generators are to have reasonable opportunity to be considered as potential least-cost solutions. A number of commenters identified as an important issue the question of who would have operational control of DG facilities. Fitchburg argued (at 12), for example, that "if DG is intended to be an alternative to distribution wires, the distribution companies must have some means of control." MeadWestvaco suggested (at 12) that the Department recognize that "any rules on generator redispatch must accommodate the unique status of on-site generators;" it suggested that such matters could be resolved through contractual processes.[1] A number of commenters (see, e.g., NAESCO at 5) recommended pilot programs to explore opportunities for distribution utilities to use distributed generation where their distribution systems require expansions or upgrades.

Relatively few commenters addressed the specific steps that utilities should take to integrate DG into their planning processes, and relatively little was said regarding the specific steps that the Department should take to implement or oversee on an ongoing basis such expanded planning processes. SEBANE was one exception, offering (at 11) a proposed framework for distribution planning and DG, which included the following steps: (1) identify locations on the generation grid where investments are necessary (looking forward three to five years); (2) quantify the value of deferring or avoiding such investments (which could be "sent out to the market" in the form of "standard offers" in $/kW increments); and (3) establish a timetable for action.

[1] There was a divergence of opinion among commentors regarding the question of whether distribution companies should be allowed to own distributed generation facilities (see, e.g., Fitchburg at 11, Northeast CHP Initiative at 9).

B. Interconnection Standards and Policies

There was widespread support among commenters regarding the desirability of having uniform interconnection standards.

Most commenters, including the distribution utilities, appear to support the call for state-wide technical standards for distributed generation. Some (see, e.g., Ingersoll-Rand at 5) recommended adoption of the IEEE standards; but others (see, e.g., Aegis Energy Services at 3) appeared to find the IEEE standards too broad or overly stringent. Many parties also supported the concept that interconnection standards should be uniform and simplified, particularly for small distributed generators (see, e.g., Plug Power at 2). However, there appears to be disagreement regarding what constitutes "small," and which exemptions should apply to "small" DG.[2]

A review of activities in other forums suggests that a lack of standard interconnection agreements can introduce a "business practice" barrier to DG. Some commenters (see, e.g., NEM at 2) did advocate the standardization of interconnection agreements. However, relatively few addressed this important topic directly; nor did many address the model interconnection

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[2] The Massachusetts Electric and Nantucket Electric ("National Grid") (at 2) and the NSTAR (at 34) state that their typical distribution feeders serve 5 to 10 MW of load. National Grid indicates (n.1) that its interconnection documents describe five categories of on-site generating facilities and suggest (at 3) that "small" customer-owned generation is 10 kW or less. It also indicates (at 6) that the distribution utilities "have agreed to implement a common process by October 1, 2002, for the interconnection of residential systems sized at 10 kW or less, which use a UL 741 compliant converter." The Cape Light Compact suggests (at 3) that most residential PV systems being installed are "between 960 and 2,000 watts," and that "oversized" technical requirements can add significantly to costs. By contrast, Trigen (at 1) suggests expedited interconnection for projects less than 20 MW, noting that larger projects tend to export to the grid. Likewise, MeadWestvaco suggests (at 4) that "small" QFs are those under 50 MW and suggest such a size threshold be adopted by the Department in order to "expand the number of small generators eligible for fast-track interconnection processing."

agreement recently developed by NARUC for use by states considering improving opportunities for DG.[3] United Technologies (at 3) did encourage the Department to adopt NARUC's model.

Standardization of the procedures to be followed by those seeking to interconnect, which would eliminate other "business practice" barriers confronted by distributed generators, also was a focus of some comments. The Gas Technology Institute ("GTI"), for example, pointed (at 2) to a "typical lack of a single utility point of contact or a defined process" as problematic. The Capstone Turbine Corporation suggested (at 4) that the application process needs to be "simplified and systematized," and offers (at 6) an illustrative flow chart. Some suggested (see, e.g., GTI at 3) suggest that unnecessary engineering studies are sometimes required by utilities, witch can add to the costs of DG projects. A number of parties (see, e.g., Keyspan at 2) pointed out varying times in distribution utility responses to interconnection applications as creating barriers to DG. There were recommendations that the distribution utilities should be required to respond to expressions of interest, provide standards, develop contracts, approve installations, and complete any other required steps within specified periods of time, which should be relatively short for small DG.

C. Ratemaking Issues

Many parties addressed ratemaking issues related to the design of standby and other tariffs to existing distributed generation, as well as incentives to those who might be considering distributed generation. Although there appears to be broad agreement that there should be uniform principles for developing rates, the Initial Comments evidenced both a lack of clarity and some measure of disagreement on appropriate methods for calculating rates. Some argued (see, e.g., NSTAR at 23) that rates associated with DG should be based on established principles

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[3] We note that on July 31, 2002, the NARUC Board of Directors adopted a resolution endorsing a model interconnection agreement and procedures that had been developed by a working group of commissioners and staff, with funding from the National Renewable Energy Laboratory. The NARUC Resolution indicates that the working group also prepared "a complete reference package to start a state proceeding."

of rate design. Others argued that DG should be accorded different treatment, either because it offers societal benefits or because the industry would not fully develop without such incentives. RealEnergy et al. (at 16) suggested that the Department provide incentives to DG under some circumstances. Similarly, Wyeth (at 22) suggested providing a credit to distributed generators whose operations bring broad public benefits. Some (see, e.g., Fitchburg at 12-14) raised issues in ratemaking for DG relative to emerging initiatives in performance based ratemaking ("PBR").

While most parties agreed that rates should be designed fairly, the definition of fair treatment varied among the various commenters. Some appeared to suggest (see, e.g., WMECo at 6) that distribution rates and standby distribution rates should be developed on the basis of embedded costs, so that DG customers would "pay their share," and the utilities would experience no revenue loss. Others appeared to argue (see, e.g., AES New Energy at 7, NEM at 3) that rates applicable to distributed generation should be based on locational or marginal costs. A number of comments supported DG rates developed on a different basis from rates applicable to other load, pointing to various benefits that may be achieved through distributed generation. Finally, some parties argued (see, e.g., AES New Energy at 2) that DG customers should not pay stranded cost or societal benefit charges.[4]

III. DOER's Current Recommendations

A. Bundling the Commenters' Recommendations to the Department

The Department's Order initiating this proceeding invites interested persons to comment on whether barriers exist to the installation of cost effective distributed generation, and to suggest steps that the Department could take to remove those barriers. The initial comments reflect considerable consensus regarding the presence of such barriers (or if not outright

[4] In addition, at least one commenter (see, e.g., SEBANE at 15) suggested modification to the Department's rules for net metering, which would affect bills for stranded costs and other charges to distributed generators.

"barriers," then at least opportunities for improvement), and provide a wide range of suggestions as to where those barriers lie and how they might be mitigated. Developing a strategy for addressing the various recommendations offered by commenters presents an initial challenge to the Department.

The Initial Comments also reflect a considerable consensus supporting the use of collaborative processes as an effective means by which to proceed. DOER recommends that the Department accept this consensus as grounds to immediately move forward to address specific barriers through collaborative discussions. Much is available by way of information and "model" documents that can be readily utilized by participants to this proceeding. In the interest of maximizing uniformity in competitive markets across the region, DOER suggests that information from other forums -- particularly any standards, procedures, and policies adopted by neighboring states -- receive careful consideration.

However, it does not appear that all issues that have been raised by commenters are amenable to resolution through consensual processes. Some, by virtue of the fact that they may be ripe for immediate resolution by the Department or because they appear to reflect more contentious issues, are likely best left out of collaborative processes. Based on its knowledge and experience and a close review of the initial comments, DOER sees the outstanding issues this proceeding as falling into three broad categories of relative to the procedural mechanisms through which they might be resolved. These we address below.

1. Issues Ripe For Immediate Department Resolution

The commenters offer a broad range of perspectives on the barriers to distributed generation, and possible improvements to be considered. Among them are at least several that represent opportunities for the Department to act immediately, without further regulatory process. DOER maintains that, in keeping with their obligation to minimize costs to customers through least-cost planning, distribution utilities should analyze distribution system needs and

publish that information in a way that will invite potential market-based solutions to those needs. Where "simple," low cost actions can be taken to improve Massachusetts' electricity markets and DG's ability to compete fairly with other resources, the Department should take such action promptly. The initial comments suggest that a number of such actions should be implemented immediately by the Department. These include the following:

(1) The Department should establish its working definition of "distributed generation and its definition of "small DG." Based on the Initial Comments and in the interest of moving quickly to improve Massachusetts power markets, DOER recommends that "small DG" be defined as distributed generation facilities that are 10 kW, or under. If this threshold is adopted, it may be appropriate to introduce technical standards that are oriented toward smaller or larger facilities in latter phases of this proceeding.[5]

(2) The Department should direct each distribution company to submit a report which identifies the locations (e.g., specific substations or distribution feeders) on its T&D system that might benefit most from DG installations during the next three to five years, along with their estimates of the $/kW costs that could be deferred or avoided through such installations across a five year planning horizon. With this filing each distribution utility also should describe generally the provisions that it currently makes for incorporating DG as a resource option relative to T&D expansions. The Department should establish specific dates in the near future by which such information must be filed.[6] The Department could subsequently require distribution companies to solicit DG or demand response proposals to address system needs that are identified.[7]

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[5] In reaching our recommendation for an initial 10 kW size threshold, we observe that the distribution utilities are currently working toward technical standards that have a 10 kW threshold. In addition note, as is suggested by NSTAR (at 5), that unit technology type also may be an important consideration. For example, IEEE has issued technical standards for photovoltaic systems under 10 kW. A number of states (including Maine, Vermont, Rhode Island and New York) have adopted interconnection standards for photovoltaic systems. The IEEE standards may offer a ready opportunity for Massachusetts to do the same.

[6] In addition to shedding light on the nature of the information that is readily available from distribution utilities, such filings may lead to "market-based" offers from distributed generators that the distribution utilities could consider in their planning processes.

[7] DOER is not advocating that DG be considered the only potential solution to distribution system improvement needs. The distribution companies should choose the most cost-effective and reliable solution whether it be DG, demand response or capital addition to the system.

(3) The Department should direct the distribution utilities to develop and file for approval generic milestone schedules with elapsed time by which they would respond to applications to interconnect with distributed generators, complete interconnection studies, identify costs to distributed generators, etc. The Department should establish specific dates in the near future by which such information must be filed.

(4) The Department should direct the distribution utilities to prepare and file (for approval and subsequent posting) manuals for those considering DG installations that would describe the procedures, technical standards, contracts, rates and fees, etc., that currently apply. The Department also should establish specific dates in the near future by which such information must be filed, and should require a description of the methods by which such information will be made publicly available;[8] and

(5) The Department should invite the distribution utilities to develop and submit pilot program proposals that would facilitate a better understanding of the costs and benefits of different types of DG installations.[9]

The above list is not intended to be exhaustive. DOER recommends that the Department act on all low-cost opportunities that it can identify representing immediate opportunities to improve the landscape for DG that it is able to identify through the Initial Comments and Reply Comments in this proceeding. In addition to beginning to immediately improve DG opportunities, such effort will diminish the range of issues to be addressed by interested parties and the Department in subsequent phases of this proceeding.

[8] We note that the Department's regulations at 220 C.M.R. § 8.04(1) requires each distribution utility to file written procedures for interconnection, metering and payments to PURPA qualifying facilities and on-site generating facilities. In addition, in its February 15, 2002 Order in D.T.E. 01-76 approving a "Revised Interconnection Tariff" for Massachusetts Electric and Nantucket Electric, the Department observed (at 2) that "the Company states that the Revised Interconnection Tariff provides the process, technical requirements, and forms of agreements that are necessary for customers wishing to interconnect …." Notwithstanding these provisions, it is not clear that the procedures applicable to customers seeking to interconnect are readily available to them in a "user friendly" form. For example, it would appear that an "easy to understand flow-chart process," such as that mentioned by NSTAR (at 32), should immediately be published and posted by all distribution utilities. As this proceeding evolves and new documentation is developed, it should be incorporated into each distribution utilities' "DG information package."

[9] We note that MECo has voluntarily initiated a DG pilot project, by which it is "testing the viability of using distributed resources to supplement distribution system planning" (National Grid at 3).

2. Issues Best Addressed Through Collaborative Processes

Many commenters suggest that collaborative processes represent an effective means by which to address issues related to distributed generation. DOER observes that a set of issues, in particular those pertaining to technical barriers to interconnection and those that may be rooted in the various business practices of distribution utilities appear amenable to resolution through collaboration among stakeholders. Indeed, these same set of issues have been and are being addressed through collaboration in other states and in other forums.

DOER recommends that a collaborative effort be commissioned by the Department to pursue resolution of a specific set of issues that have been identified in the initial comments[10]. Those responsible for directing the collaborative process should be directed to seek to achieve the following:

(a) Simplified, state-wide technical standards for small DG;

(b) Simplified, state-wide technical standards for all remaining DG;

(c) A state-wide interconnection agreement;

(d) Interconnection procedures, standardized to the extent feasible;

(e) Dispute resolution procedures, standardized to the extent feasible;

(f) A time schedule for responding to interconnection applications; and

(g) A design for generic distribution utility guidance documents describing interconnection procedures and plans for posting published documents.

DOER proposes a timeframe below for the collaborative process to complete its work.

[10] DOER appreciates and supports the Massachusetts Technology Collaborative's offer to support facilitation and other services to support the collaborative activities in this proceeding.

3. Issues Best Addressed Through Further Department Proceedings

DOER fully appreciates the value of consensual decision making. However, based on its review of the initial comments, DOER believes that there is a set of issues that are sufficiently contentious that Department proceedings likely would bring them to closure more expeditiously than can be expected of a collaborative effort. This includes issues related to the rates that would apply to distributed generators, including: (1) rates for standby, backup and other services to available to distributed generators; (2) the applicability of stranded cost and societal benefit charges to distributed generators and: (3) incentives that may be offered to attract DG to particular locations on a distribution utility's system. In a further phase of this proceeding the Department should seek comment and evidence on several challenging questions in regard to ratemaking. For example:

(a) What is the full range of costs and benefits of DG relative to distribution system reliability, efficiency and societal impacts?

(b) Should distributed generators be expected to pay stranded costs and societal benefit charges?[11] Would exit fees be an effective method for cost recovery?

(c) Should standby rates be based on embedded or marginal cost principles?

(d) Should distributed generators with different operating characteristics receive differing levels of service (e.g. firm or interruptible)?

(e) Should rate designs for DG include contractual demand charges?

(f) Should rates be location specific (i.e. reflect the specific placements of DG installations relative to the utility T&D systems)?

[11] DOER notes that G.L. c. 164, § 1G establishes protections for certain distributed generators (i.e., on-site generation or cogeneration facility of 60 kW or less). The Department could resolve whether such exemption will apply more broadly.

(g) Do differing environmental impacts (depending on the technology of the DG unit) warrant different rate treatment?

(h) Should the size of the DG unit affect rate treatment?

Regulated utility companies face a lower cost of capital than outside DG developers due to their guaranteed rates of return and monopoly status than competitive DG developers. This lower cost of capital can be considered a barrier to entry by merchant DG developers. DOER recommends that the Department investigate ways to reduce this entry barrier for merchant DG developers. For example, LDCs may be able to offer financing arrangements, whereby merchant DG developers could obtain access to LDCs' lower cost of capital.

Another issue that the Department should address directly pertains to the circumstances under which distribution utility ownership of distributed generation would be acceptable. DOER maintains that distribution utilities should own DG only when competitive distributed generators or other third party entities do not respond to well advertised DG opportunities and when DG represents a resource option that is clearly a lest cost solution to a reliability need. The Department may be prepared to identify immediately its policy on utility ownership of DG. If not, it should initiate proceedings to obtain whatever additional input it requires in order to resolve this matter as soon as is reasonable possible.

B. The Department Should Adopt A "Two Track" Process for Phase 2 of this Proceeding

As discussed above, the issues before the Department can be divided into three categories: (1) issues that should be resolved by the Department through immediate action, (2) issues that should be addressed through collaborative processes and (3) issues that should be resolved by the Department through additional proceedings. DOER suggests that the Department implement a "two track" process. In simplest terms, "Track A" would encompass the collaborative processes and any subsequent regulatory proceedings necessary to bring issues assigned to the collaborative to completion. "Track B" would apply to those issues that the Department would address directly itself. Track A would largely be left to those responsible for managing the collaborative effort. Accordingly, we see high value in a comprehensive effort to design and effectively structure the collaborative.

DOER anticipates that the Track B ratemaking investigation would be a continuation of the instant proceeding. As noted above, DOER recommends that it begin with an invitation to interested persons to comment on the ratemaking issues raised by DG and to present evidence on their values or magnitudes. The Department should further request proposals for specific ratemaking methods, including any appropriate incentives for DG[12].

C. Timeline

In identifying the process by which it intends to pursue resolution of this proceeding, the Department should identify the schedule by which it intends to achieve certain milestones in both Track A and Track B. DOER encourages the Department to pursue an optimistic schedule for

[12] As suggested above, DOER anticipates that "fast track" proceedings to address the definition of "DG" and "small DG" may be appropriate.

the proceedings given the substantial groundwork for action that has been laid in other states, and recognizing the advantages of achieving a rapid removal of barriers to a full and fair competition in Massachusetts' electricity markets. DOER suggests that the following be considered as broad guidelines in developing any such schedule:

(1) The Department should promptly conclude Phase 1 as outlined above and set forth the framework, procedures, scope and schedule for Phase 2;

(2) Roughly one month thereafter, the Department should seek to have Track A's collaborative meetings underway;

(3) Roughly four months from the start of the collaborative, the Department should seek to have the collaborative's recommendations on technical standards for interconnection, a standard interconnection agreement, and procedures;

(4) Roughly two months from the issuance of the Order and findings in Phase 1, the Department should receive initial comments on Track B's ratemaking issues;

(5) Roughly three months from the end of Phase I the Department should receive reply comments on ratemaking issues;

(6) As soon as possible thereafter the Department should issue its generic Order on DG Ratemaking.

IV. Conclusion

By opening this proceeding, the Department has recognized that there are important benefits to be gained by encouraging the development and deployment of distributed generation. As DOER has proposed in this Reply Brief, there are also a number of technical, economic and policy issues that must be fully considered before the Department can set final rules and guidelines concerning how distribution generation projects will be built in the future. DOER believes that the phased approach that we propose here will lead to an orderly but expeditious resolution of the

issues that we have identified as key to advancing the development of distributed generation. DOER looks forward to working closely with the Department and interested parties on these issues in the near future.

Respectfully submitted,

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